Then, Dr. Sabela C. Mallo from the University of Santiago de Compostela (Spain) and Dr. Byron Creese from the University of Exeter (UK) will talk on methodological issues regarding the MBI-C, the underlying structure of the instrument and the impact of the self and informant ratings in the results of the questionnaire.

Dr. Martin Vyhnalek from the Faculty of Medicine of Prague (Czech Republic) will discuss the MBI profile and severity in a sample of β-amyloid positive individuals with amnestic Mild Cognitive Impairment compared to Cognitively Normal older adults.

Lastly, Dr. Camilla Elefante and Giulio Emilio Brancati from the University of Pisa (Italy) will analyze the relationships and boundaries between MBI and late-life major primary psychiatric disorders in patients who attend to psychogeriatric settings.

Reference

Ismail Z et al. *J. Alzheimers Dis.* 2017; 56(3),929-938

The role of Mild Behavioral Impairment in a future era of Alzheimer's disease modifying treatments

Author: Maurits Johansson, MD, PhD, Lund University.

Early clinical risk markers of neurodegenerative diseases, such as Alzheimer's disease (AD), can be considered fundamental in a new era with novel disease modifying treatments on the horizon. Mild Behavioral Impairment (MBI) is a diagnostic construct defined by the later-life emergence of persistent neuropsychiatric symptoms (e.g. apathy, anxiety, depression, amongst others) displayed by older adults, with the aim to identify individuals at increased risk of future dementia. According to established MBI criteria the syndrome can co-occur with mild cognitive impairment due to a neurodegenerative disease or even precede it, and in fact, MBI is most meaningful when reported in conjunction with cognitive status, as MBI-associated risk is moderated by cognitive status. MBI symptomatology has been reported prevalent among older adults, as well as in patients with early stages of neurodegenerative disease. Symptoms of MBI are further associated with several clinically negative outcomes, such as a reduced quality of life, increased caregiver burden and earlier institutionalization. In support of the MBI construct, several previous reports have demonstrated MBI to be predictive of future cognitive decline, dementia, or AD. The construct is also related to AD biomarkers including beta-amyloid, tau, and cerebral atrophy. Intriguingly, an earlier study indicates that MBI even can precede memory deficits in its association with early tau deposition in cognitively unimpaired elderly with confirmed amyloid-beta pathology, strengthening its position as an early marker of dementing biochemical processes. Despite this growing evidence of being both prevalent and an early prognostic marker, MBI is still only given diminutive consideration in contemporary clinical diagnostic criteria for AD. Perhaps so since the added value of MBI in such criteria has rarely been investigated. Consequently, cognitively unimpaired subjects with positive MBI and AD biomarker status face the risk of not being eligible for a future disease modifying AD treatment since they formally do not fulfill AD diagnostic criteria. Hence, studies exploring the added value of MBI in clinical diagnostic criteria for neurocognitive disorders are prompted.

The assessment of Mild Behavioral Impairment (MBI): Some methodological issues

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Objective: The assessment of MBI involves two important issues: 1) to know the underlying structure of the Mild Behavioral Impairment Checklist (MBI-C) a questionnaire designed to evaluates Neuropsychiatric Symptoms (NPS) in pre-dementia states; and 2) to consider self and proxy (i.e., study partner) symptom ratings that may not capture comparable samples. Our objective is to give some answer to these questions: first, to analyze the underlying structure of the MBI-C at baseline and follow-up using Multidimensional Scaling (MDS) and two, to determine how self and proxy ratings and the choice of rating type impact in the results of the MBI-C.

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of the MBI-C at baseline and follow-up using Multidimensional Scaling (MDS) and two, to determine how self and proxy ratings and the choice of rating type impact in the results of the MBI-C.

Methods: To analyze MBI-C structure, 200 Subjective Cognitive Decline and Mild Cognitive Impairment patients from the CompAS longitudinal study completed baseline and follow-up assessments. Two-step bidimensional weighted dichotomous MDS were performed. All items were included in the first step. Items closely associated with each dimension (1 SD above or below the mean) were selected in a second step to obtain the final models solution.
We will also present a review of the literature on the importance of self and proxy MBI-C ratings. We will also present new empirical evidence based on data from over 10,000 cognitively normal.

Results: Results from baseline and follow-up showed two dimensions: Dimension I (right-left) differentiate high and low emotional activation and Dimension II (top-down) high and low behavioral activation. The combination of both generates 4 quadrants: resistance, restlessness, flattening and desolation. The final models were built considering the most relevant items, with little differences between baseline and follow-up. The good fit of the models, type of two-dimensional solution and group weights were similar in baseline and follow-up.
Regarding our second objective, the results suggest that self and proxy ratings may not capture comparable samples and that the choice of rating type can indeed impact the conclusions drawn from analysis.

Conclusions: The 4 quadrants identified could be the most useful NPS to determine risk factors for predementia patients. Also, the findings suggest that the way of applying the MBI-C has relevant implications.

References

Ismail Z et al. *J. Alzheimers Dis.* 2017; 56(3),929-938

Mild behavioral impairment in prodromal Alzheimer´s disease and its association with *APOE* and *BDNF* risk genetic polymorphisms

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Objective: We aimed to examine the profile and severity of mild behavioral impairment (MBI) in a sample of β-amyloid positive individuals with amnestic mild cognitive impairment (aMCI)compared to cognitively normal older adults (CN). Within aMCI, we further examined the potential influence of APOE and BDN Frisk genetic polymorphisms on MBI severity.

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